

About This Standard

Current Status *Mandated*

Standard Identifier ISO 19111:2007

Title of Standard

Geographic information -- Spatial referencing by coordinates, 26 June 2007

Standards History

Introduced to Registry	Date Emerging	Date Mandated	Last Status Update	Last Status Review	Inactive/Retired
2008-11-20	n/a	2008-11-20	2008-11-20	2008-11-20	n/a

Replaced [ISO 19111:2003](#)

Standards Body [ISO](#) [Broken Link?](#)
URL to Access or Acquire <http://www.ansi.org>

Working Group

Primary Owner Geospatial Intelligence (GWG)
Secondary Interest DoD Intelligence

Service Area GEOINT: Geospatial

KIPs No KIP Found

Standard Applicability

2008-11-04

This standard is applicable to those who wish to establish a common requirement for describing coordinate reference systems (CRSs) including the datum giving the relationship to the earth and the coordinate system used.

Standard Abstract

2008-11-04

Any coordinate-based usage of geographic information needs a unique definition of the underlying reference system. A standardized conceptual schema for coordinate-based reference systems is necessary for geographic information to be shared between applications. The schema will be of value to developers of geographic information systems and other applications requiring data based upon coordinate reference systems. It will also aid users in specifying their requirements for data referenced by coordinates and will ensure that data producers use coordinate reference systems which are consistently defined. This International Standard establishes a common requirement for describing coordinate reference systems (CRSs) including the datum giving the relation to the Earth and the coordinate system used. The standard stipulates that CRSs do not alter with time. Changes with time are catered for by specification of new CRSs which identify the epoch of their realisation. Hybrid coordinate reference systems (HCRSs) are included to cater for situations when the components of position come from different CRSs. A typical example consists of geodetic coordinates (for horizontal position) and heights related to sea level. The requirements for transformation of data with reference to different

datums are given, as well as the requirements for conversion including map projection between different coordinate systems. The definitions of accuracy and precision of spatial reference by coordinates are given. This standard is complementary to MIL-STD-2401 DoD World Geodetic System 84 (WGS84), 11 January 1994.

Profiling Questions

GEOINT: Geospatial

- Do you have a requirement for use of a coordinate location based application based on usage of geographic information which needs a unique definition of the a reference system?

Products Incorporating This Standard

The Open Geospatial Consortium has developed implementation specifications with extensions to ISO 19111:2007.

Relevant Information

This citation was authored by the GWG Metadata Focus Group.

Implementation Guidance

This standard is complementary to MIL-STD-2401 DoD World Geodetic System 84 (WGS84), 11 January 1994, and NIMA Technical Report TR8350.2, Department of Defense World Geodetic System 1984, Its Definition and Relationships With Local Geodetic Systems, Third Edition, 4 July 1997.

Standard Selection Criteria

Interoperability/Supportability

This standard (in conjunction with other ISO TC 211 standards) forms the basis for the interchange and distribution of future geospatial intelligence data. The standard provides for the treatment and interoperability for using ISO 19111 in the application of spatial referencing by coordinates. This updated standard adds modeling detail in the areas of coordinate operations, coordinate reference systems, and coordinate systems necessary for ensuring interoperability. It removes inconsistencies in the first edition, and it improves harmonization with other ISO/TC 211 documents, especially ISO 19115:2003 w/ ISO 19115 Cor. 1:2006, ISO 19136 GML, and ISO 19127 Geodetic codes and parameters.

Technical Maturity

This is an update of the original standard published in 2003. This is a mature International Standard. Drafts of this standard were reviewed by experts from a number of nations, and the standard was approved by multiple national standards bodies, including the USA (ANSI).

Public Availability

This standard is publicly available, in either hardcopy (paper) or softcopy (PDF) form, from the International Organization for Standardization and/or ANSI.

Implementability

This is an abstract standard. A specification needs to be developed from this standard appropriate for the capability desired. The National Geospatial-Intelligence Agency (NGA), Open Geospatial Consortium (OGC), and the United States

Geological Survey have developed specifications from this standard.

Authority

ISO TC 211 - Geographic Information is available at <http://www.isotc211.org/>.

Standard Type Non-Military

Standard Classification Unclassified

Keywords for Search coordinate, coordinates, datum, geodetic, hybrid coordinates, spatial, spatial reference